

FIBERS SITE GROUP

August 10, 2016

Via Email Electronic Copy

Adalberto Bosque, PhD, MBA, REM, CEA
Response and Remediation Branch
U.S Environmental Protection Agency
City View Plaza II - Suite 7000
48 RD, 165 Km. 1.2
Guaynabo, PR 00968-8069

Subject: RD/RA Monthly Report – July 2016
Fibers Public Supply Wells Site
Guayama, Puerto Rico

Dear Mr. Bosque:

On behalf of the Fibers Public Supply Wells Site Settling Defendants, we are submitting the attached RD/RA Monthly Report prepared pursuant to the Consent Decree (Civil Action No. 92-2486) in the matter of *Unites States v. Anaquest Caribe, Inc. et al*, Section IX, Paragraph 30, Reporting Requirements.

Please feel free to contact Mr. James Kirschner of ARCADIS at (602) 797-4519 or me at (724) 544-4874 if you have any questions or comments regarding this submittal.

Sincerely,



Joe Biss, CHMM
Fibers Site Group Project Coordinator
EHS Support LLC

Copies:

Chief, New York/Caribbean Superfund Branch, Attn. Mel Hauptman- via email only
Ms. Evelyn Rivera-Ocasio, Assistant Regional Counsel – Caribbean Programs – via email only
Chief, Environmental Enforcement Division, U.S. Department of Justice (DOJ #90-11-2-768)
State Remedial Project Manager, Puerto Rico Environmental Quality Board
Ms. Katherine Mishkin, Hydrogeologist, USEPA Superfund Technical Support Section – via email only
Ms. Enid Diaz, Departamento de Recursos Naturales y Ambientales
Mr. Jorge Morales, PRIDCO - via email only
Mr. Joel Melendez Rodriguez, PRIDCO - via email only
Ms. Ana Palou Balsa, PRIDCO – via email only
Mr. Dan Vineyard, Jackson Walker- via email only
James Kirschner, Arcadis - via email only

RD/RA Monthly Report – July 2016
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

(a) Description of actions which have been taken toward achieving compliance with this Decree.

Fibers Air Stripping System

The Fibers groundwater extraction and treatment system (GWETS) was operational for approximately 66% of the time during July 2016. The GWETS had five automated shut downs due to power outages and one shut down due to GWETS maintenance. The Fibers Site Group is undertaking a means to mitigate the down time from the power outages, additional details are provided in Section (d) below.

A summary of the daily treatment system operating records is presented in Table 1. The GWETS average flow rates are depicted on Figure 1. The GWETS operated at an average flow rate of 222 gallons per minute (gpm) and treated approximately 10.7 million gallons of water in July 2016. To date (since May 1999), approximately 2.98 billion gallons of water have been treated at the Fibers Site.

(b) Summary of all sampling results and tests, and all other data received or generated by Settling Defendants.

Groundwater influent and effluent samples were collected on July 5, 2016 and analyzed by Pace Analytical Services, Inc. (Pace). A summary of the July 5, 2016 GWETS Laboratory Analytical Results are provided in Table 2. A summary of influent groundwater concentrations of tetrachloroethene (PCE) and total haloethers from the GWETS is depicted on Figures 2 and 3, respectively.

Arcadis U.S. Inc. (Arcadis) performed a data quality assessment (validation) of the laboratory analytical results reported by Pace. Results are summarized in the Data Review Report #25936R (July 5, 2016 sampling event) and provided as Attachment 1. A copy of the chain of custody and annotated sample analysis data sheets are provided as an attachment to the Data Review Report. A copy of the complete Laboratory Analytical Report #2039265 (July 5, 2016 sampling event) is provided as Attachment 2. A copy of the GWETS Sampling and Monitoring Field Form, July 5, 2016, documenting sample collection information, individual flow rates at the three groundwater extraction wells and treatment system parameters is provided as Attachment 3.

The Fibers Site Group collected influent and effluent water samples from the GWETS on July 11, 2016, at the request of the United States Environmental Protection Agency (USEPA), to screen the water quality against the Total Metals standards established within the *1990 Puerto Rico Water Quality Standards Regulation* (PRWQSR). The GWETS Influent and Effluent Sampling Results, July 11, 2016, are presented in Table D-1 (Attachment D). The Data Review Report (#25959R) and Laboratory Analytical Report (#2039549) for the July 11, 2016 sampling event is provided as Attachment 4. At the request of the USEPA, a short summary report was provided ahead of this monthly report submission on August 3rd to Mr. Adalberto Bosque and Mr. Mel Hauptman.

(c) List of all work plans, plans and other deliverables completed and submitted.

None for this reporting period

(d) Description of all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next six weeks.

An Operations, Maintenance, and Monitoring Manual is anticipated to be submitted to the USEPA in September 2016.

A Notice of Completion Report, with stamped engineering as-built construction drawings, is anticipated to be submitted to the USEPA in September 2016.

The first semi-annual groundwater monitoring and sampling event of 2016 was completed at the end of May 2016. Upon receipt of completed data packages from the laboratory, analytical data will undergo validation. Once validated, the data will be submitted with the first semi-annual groundwater monitoring and sampling report for 2016.

Environmental Resource Technologies (ERTEC) completed Phase 2 and Phase 3 subsurface soil investigations at the Baxter-Guayama facility on the Fibers Site in October 2015 and February 2016. Upon completion of the data validation, a summary of results from ERTEC's Phase 2 and Phase 3 subsurface investigations will be included in a subsequent monthly report.

The Fibers Site Group will replace two groundwater flow meters located at extraction wells RW-2 and RW-4. The Fibers Site Group will install additional relays and wiring to the Main Control Panel and program the Supervisory Control and Data Acquisition (SCADA) system to allow automatic (and remote) system restarts subsequent to a power outage or other system shut down to optimize the return to service of the GWETS.

(e) Information regarding the percentage completion, unresolved delays encountered or anticipated.

Construction Activities – 100% complete.

System Start-Up – 100% complete.

Start-Up Performance Monitoring – 100% complete.

Long-Term Operation & Maintenance Period – In progress.

(f) List of any modification to work plans or other schedules the Settling Defendants have proposed.

None.

(g) Description of activities undertaken in support of the Community Relations Plan.

No support activities have been requested for the next planning period.

(h) Actions undertaken to address outside parties concerns.

No concerns from outside parties were encountered during this reporting period.

Tables

Table 1
Summary of Daily Treatment System Operating Records - July 2016
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

Recording Date	Influent Flow (gpm) ¹	Effluent Flow (gpm) ²	RW-2 (gpm) ³	RW-4 (gpm) ⁴	RW-5 (gpm) ⁵	pH ⁶	Comments
7/1/2016	336	360	115	145	74	8.1	
7/2/2016	334	365	115	145	75	8.1	
7/3/2016	335	359	115	145	75	8.1	
7/4/2016	331	362	115	145	75	8.1	
7/5/2016	335	361	115	144	75	8.1	
7/6/2016	336	367	114	145	79	8.1	
7/7/2016	341	368	114	145	81	8.1	
7/8/2016	340	368	115	145	80	8.1	
7/9/2016	339	366	115	145	80	8.1	
7/10/2016	341	368	115	145	80	8.1	
7/11/2016	216	234	72	94	51	8.0	GWETS shut down due to power outage.
7/12/2016	0	0	0	0	0	7.9	
7/13/2016	0	0	0	0	0	-	GWETS maintenance.
7/14/2016	15	15	6	8	4	8.2	GWETS maintenance. GWETS shut down due to power outage.
7/15/2016	0	0	0	0	0	8.5	
7/16/2016	0	0	0	0	0	8.4	
7/17/2016	0	0	0	0	0	8.3	
7/18/2016	100	104	34	44	24	8.3	GWETS restarted; adjusted flow rate of recovery wells pumps.
7/19/2016	333	359	110	145	80	8.2	
7/20/2016	336	361	110	145	80	8.2	
7/21/2016	336	359	110	145	80	8.2	
7/22/2016	334	361	109	145	80	8.2	
7/23/2016	57	61	21	26	14	8.1	GWETS shut down due to power outage.
7/24/2016	96	106	34	44	24	8.1	
7/25/2016	337	361	110	145	80	8.3	
7/26/2016	305	331	101	133	74	8.3	GWETS shut down due to power outage.
7/27/2016	0	0	0	0	0	8.0	
7/28/2016	134	152	47	63	34	8.1	GWETS maintenance.
7/29/2016	336	362	110	145	80	8.3	
7/30/2016	335	362	109	145	80	8.3	
7/31/2016	214	231	71	93	51	8.2	GWETS shut down due to power outage.
Monthly Average	222	239	75	96	52	8.0	

Notes:

Flow rates are 24-hour daily average.

gpm = gallons per minute.

¹ = Recorded from instrument FIT-101.

² = Recorded from instrument FIT-301.

³ = Recorded from instrument RW2 FIT.

⁴ = Recorded from instrument RW4 FIT.

⁵ = Recorded from instrument RW5 FIT.

⁶ = Recorded from instrument pHIT-201A.

Table 2
Summary of Treatment System Laboratory Analytical Results
July 2016
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

Fibers Groundwater Extraction and Treatment System

Laboratory analytical results for water samples collected at the influent and effluent sample tap locations from the Fibers Groundwater Extraction and Treatment System on July 5, 2016 are presented below. The system average effluent flow rate at the time the samples were collected was 362 gallons per minute (gpm). Sample results indicate that the treatment system is operating in compliance with operating parameters pursuant to the Consent Decree.

	VOC (µg/L)			
	Sample ID			
Compound	EFF-20160705	EFFDUP-20160705	INF-20160705	TB-20160705
Tetrachloroethene	ND	ND	9.3	ND
Enflurane	ND	ND	1.8	ND
Haloether 229	ND	ND	30.5	ND
Haloether 406	ND	ND	1.3	ND
Haloether 508	ND	ND	60.2	ND
Haloether 528	ND	ND	1.9	ND
Halomar	ND	ND	1.3	ND
Isoflurane	ND	ND	118	ND
Total Haloethers	ND	ND	215	ND
Acetone	23.8	16.9	9.2	ND
Other VOC	ND	ND	ND	ND

Notes:

VOC = volatile organic compounds.

µg/L = micrograms per liter.

EFF = effluent sample.

EFFDUP = effluent duplicate sample.

INF = influent sample.

TB = trip blank.

ND = not detected at or above laboratory reporting limit.

Figures

Figure 1
Fibers Public Supply Wells Superfund Site
Summary of Treatment System Flow Rates

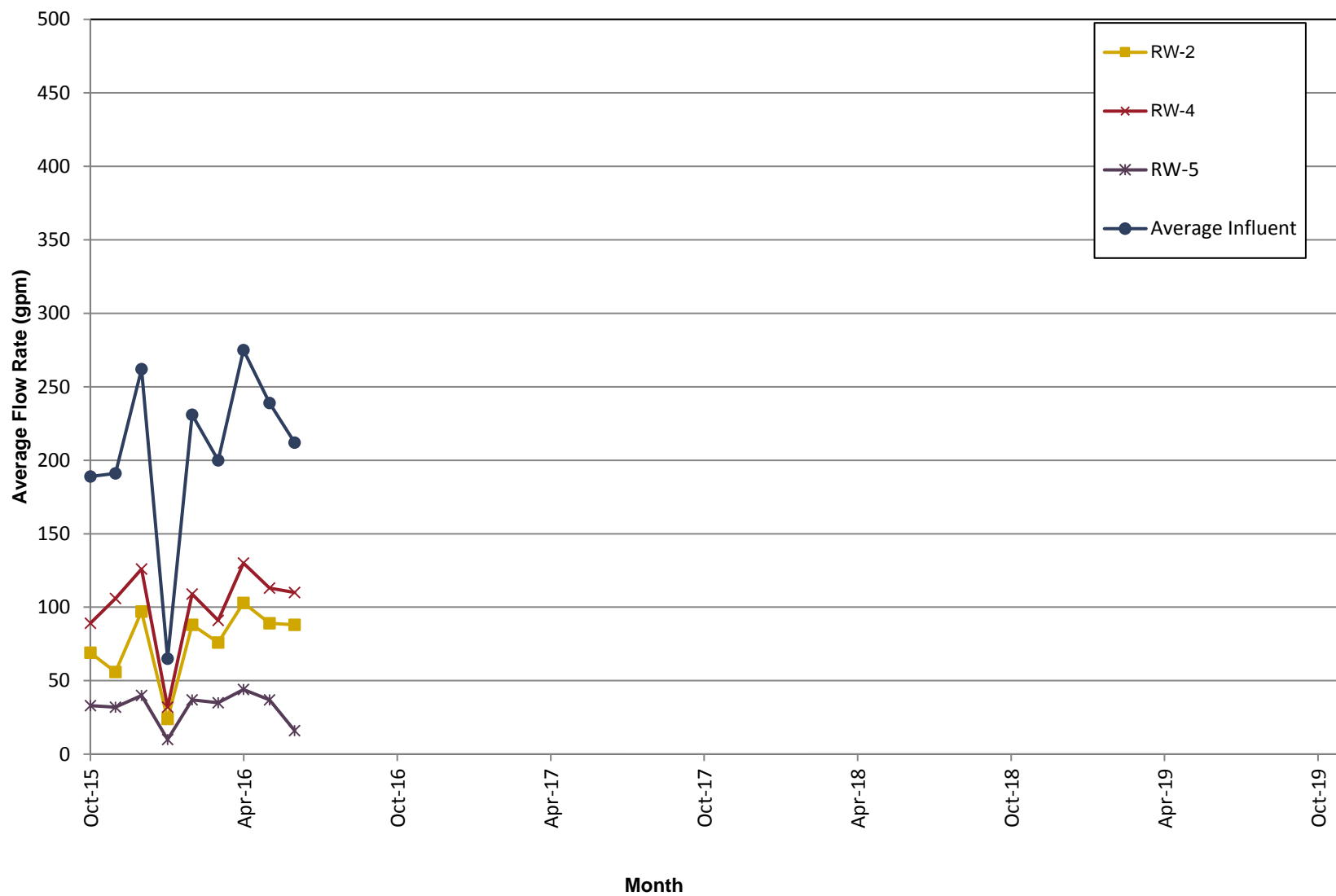


Figure 2
Fibers Public Supply Wells Superfund Site
Treatment System Influent -
Tetrachloroethene (PCE) Concentrations

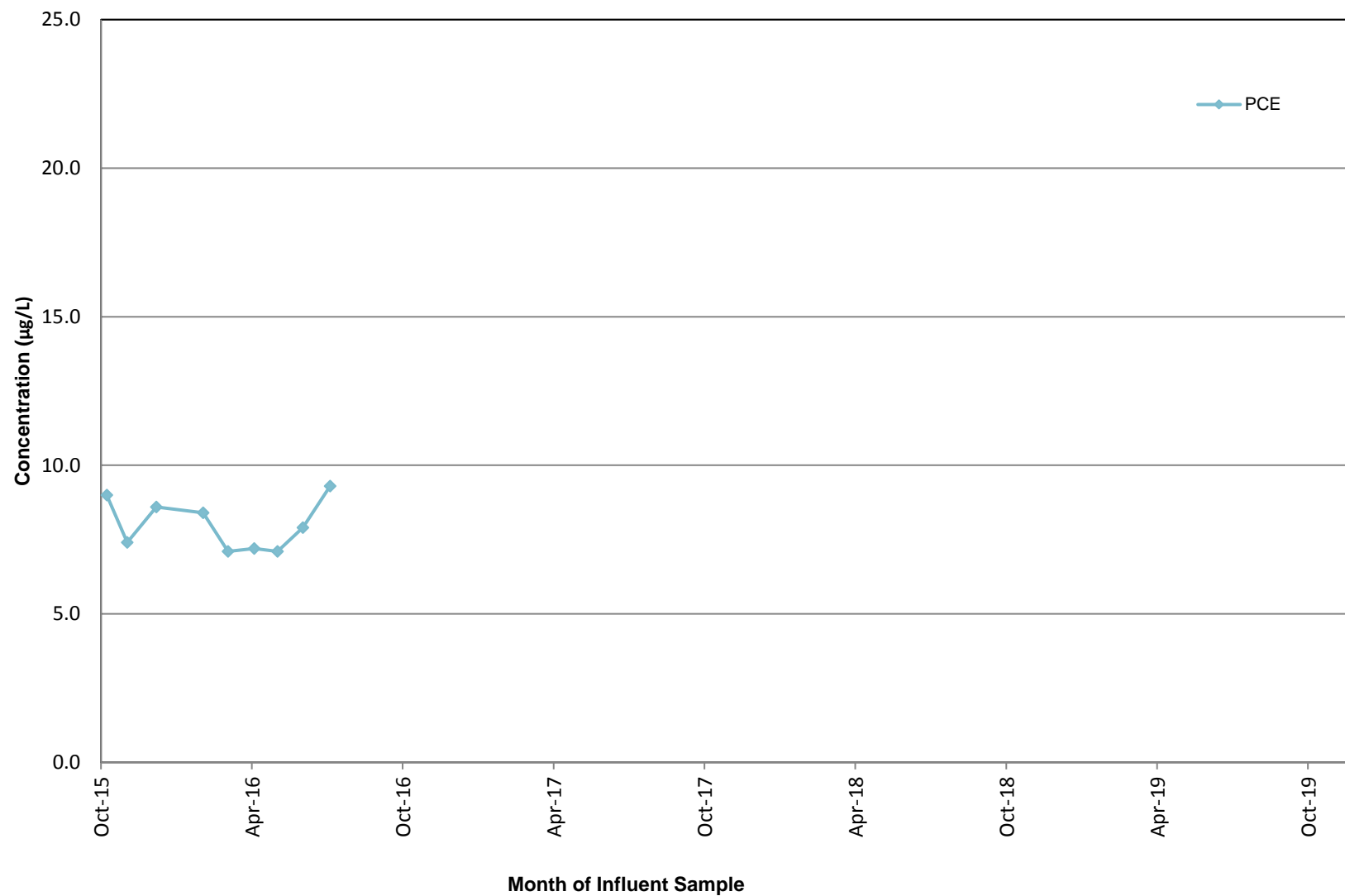
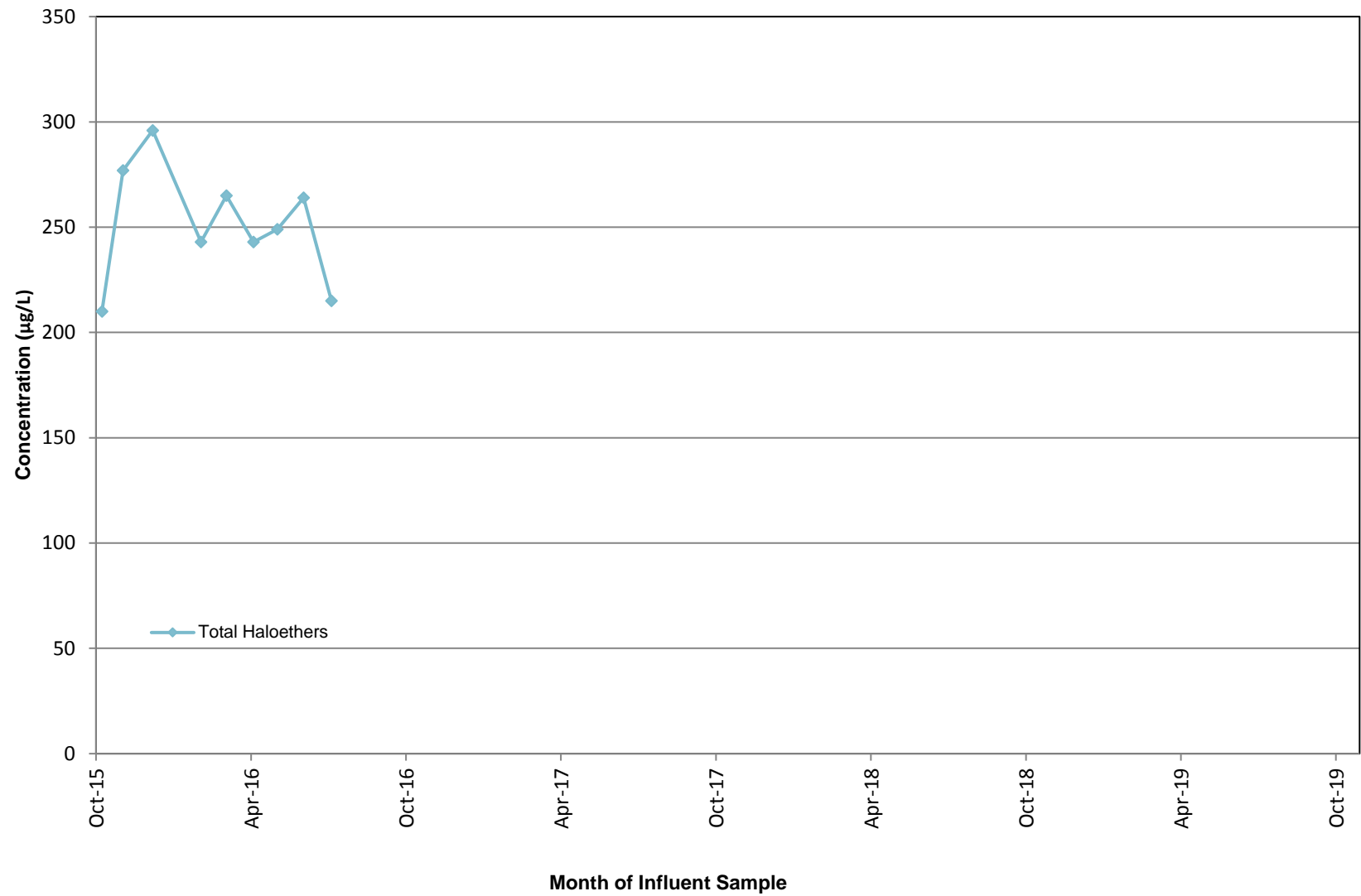


Figure 3
Fibers Public Supply Wells Superfund Site
Treatment System Influent -
Total Haloethers Concentrations



Attachment 1
Data Review Report #25936R

Fibers Group

Data Review

GUAYAMA, PUERTO RICO

Volatiles Analyses

SDG #2039265

Analyses Performed By:
Pace Analytical Services, Inc.
New Orleans, Louisiana

Report: #25936R

Review Level: Tier II

Project: CO001911.0003.1605A

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #2039265 for samples collected in association with the Fibers Group Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	TPH	MET	MISC
TB-20160705	2039265001	Water	07/05/2016		X				
INF-20160705	2039265002	Water	07/05/2016		X				
EFF-20160705	2039265003	Water	07/05/2016		X				
EFF-20160705 DUP	2039265004	Water	07/05/2016	EFF-20160705	X				

Note:

1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location EFF-20160705.

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

s.u. Standard units

All samples were analyzed within acceptable holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the RL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
EFF-20160705	Acrolein	<10%	<10%
	o-Xylene		
	Styrene		
	Vinyl chloride		
	cis-1,3-Dichloropropene	AC	<LL but >10%
	Ethylbenzene	<LL but >10%	<LL but >10%
	m&p-Xylene		
	Toluene		

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
EFF-20160705	Carbon disulfide
	Haloether 229

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
EFF-20160705/ EFF-20160705 DUP	Acetone	23.8	16.9	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required	
	No	Yes	No	Yes		
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)						
Tier II Validation						
Holding times		X		X		
Reporting limits (units)		X		X		
Blanks						
A. Method blanks		X		X		
B. Equipment/Field blanks					X	
C. Trip blanks		X		X		
Laboratory Control Sample (LCS) Accuracy (%R)		X		X		
Laboratory Control Sample Duplicate (LCSD) %R					X	
LCS/LCSD Precision (RPD)					X	
Matrix Spike (MS) %R		X	X			
Matrix Spike Duplicate (MSD) %R		X	X			
MS/MSD Precision RPD		X	X			
Field/Laboratory Duplicate Sample RPD		X		X		
Surrogate Spike %R		X		X		
Dilution Factor		X		X		
Moisture Content					X	

%R Percent recovery
 RPD Relative percent difference
 %RSD Relative standard deviation
 %D Percent difference

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE:



DATE: July 20, 2016

PEER REVIEW: Dennis Capria

DATE: July 25, 2016

**CHAIN OF CUSTODY/
ANNOTATED SAMPLE ANALYSIS DATA SHEETS**

ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: TB-20160705		Lab ID: 2039265001		Collected: 07/05/16 00:00		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		07/07/16 16:19	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:19	107-02-8		
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:19	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:19	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:19	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:19	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:19	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:19	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:19	75-15-0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:19	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:19	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:19	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:19	67-66-3		
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:19	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:19	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:19	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:19	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:19	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:19	10061-02-6		
Enflurane	ND	ug/L	1.0	1		07/07/16 16:19	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:19	100-41-4		
Haloether 229	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 406	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 508	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 528	ND	ug/L	1.0	1		07/07/16 16:19			
Halomar	ND	ug/L	1.0	1		07/07/16 16:19			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:19	591-78-6		
Isoflurane	ND	ug/L	1.0	1		07/07/16 16:19			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:19	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:19	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:19	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:19	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:19	79-34-5		
Tetrachloroethene	ND	ug/L	1.0	1		07/07/16 16:19	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:19	108-88-3		
Total Haloether	ND	ug/L	1.0	1		07/07/16 16:19			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	79-01-6		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: TB-20160705		Lab ID: 2039265001		Collected: 07/05/16 00:00		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:19	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:19	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:19	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:19	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:19	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:19	95-47-6		
Surrogates									
Toluene-d8 (S)	100	%.	79-119	1		07/07/16 16:19	2037-26-5		
4-Bromofluorobenzene (S)	98	%.	68-124	1		07/07/16 16:19	460-00-4		
Dibromofluoromethane (S)	92	%.	72-126	1		07/07/16 16:19	1868-53-7		

Sample: INF-20160705		Lab ID: 2039265002		Collected: 07/05/16 11:50		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	9.2	ug/L	4.0	1		07/07/16 16:36	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:36	107-02-8		
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:36	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:36	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:36	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:36	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:36	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:36	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:36	75-15-0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:36	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:36	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:36	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:36	67-66-3		
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:36	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:36	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:36	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:36	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:36	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:36	10061-02-6		
Enflurane	1.8	ug/L	1.0	1		07/07/16 16:36	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:36	100-41-4		
Haloether 229	30.5	ug/L	1.0	1		07/07/16 16:36			
Haloether 406	1.3	ug/L	1.0	1		07/07/16 16:36			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:36			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:36			

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS
Pace Project No.: 2039265

Sample: INF-20160705		Lab ID: 2039265002		Collected: 07/05/16 11:50		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:36			
Haloether 508	60.2	ug/L	1.0	1		07/07/16 16:36			
Haloether 528	1.9	ug/L	1.0	1		07/07/16 16:36			
Halomar	1.3	ug/L	1.0	1		07/07/16 16:36			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:36	591-78-6		
Isoflurane	118	ug/L	1.0	1		07/07/16 16:36			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:36	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:36	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:36	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:36	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:36	79-34-5		
Tetrachloroethene	9.3	ug/L	1.0	1		07/07/16 16:36	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:36	108-88-3		
Total Haloether	215	ug/L	1.0	1		07/07/16 16:36			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	79-01-6		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:36	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:36	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:36	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:36	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:36	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:36	95-47-6		
Surrogates									
Toluene-d8 (S)	99	%.	79-119	1		07/07/16 16:36	2037-26-5		
4-Bromofluorobenzene (S)	95	%.	68-124	1		07/07/16 16:36	460-00-4		
Dibromofluoromethane (S)	91	%.	72-126	1		07/07/16 16:36	1868-53-7		

Sample: EFF-20160705		Lab ID: 2039265003		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	23.8	ug/L	4.0	1		07/07/16 16:01	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:01	107-02-8	M1 R	
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:01	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:01	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:01	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:01	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:01	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:01	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:01	75-15-0	R1 U	
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:01	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:01	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:01	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:01	67-66-3		

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS
Pace Project No.: 2039265

Sample: EFF-20160705		Lab ID: 2039265003		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:01	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:01	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:01	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:01	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:01	10061-01-5	MT UJ	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:01	10061-02-6		
Enflurane	ND	ug/L	1.0	1		07/07/16 16:01	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:01	100-41-4	MT UJ	
Haloether 229	ND	ug/L	1.0	1		07/07/16 16:01		RT UJ	
Haloether 406	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 508	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 528	ND	ug/L	1.0	1		07/07/16 16:01			
Halomar	ND	ug/L	1.0	1		07/07/16 16:01			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:01	591-78-6		
Isoflurane	ND	ug/L	1.0	1		07/07/16 16:01			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:01	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:01	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:01	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:01	100-42-5	M1 R	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:01	79-34-5		
Tetrachloroethene	ND	ug/L	1.0	1		07/07/16 16:01	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:01	108-88-3	MT UJ	
Total Haloether	ND	ug/L	1.0	1		07/07/16 16:01			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	79-01-6		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:01	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:01	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:01	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:01	75-01-4	M1, R1 R	
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:01	179601-23-1	M1 UJ	
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:01	95-47-6	M1 R	
Surrogates									
Toluene-d8 (S)	96	%	79-119	1		07/07/16 16:01	2037-26-5		
4-Bromofluorobenzene (S)	96	%	68-124	1		07/07/16 16:01	460-00-4		
Dibromofluoromethane (S)	91	%	72-126	1		07/07/16 16:01	1868-53-7		

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS
Pace Project No.: 2039265

Sample: EFF-20160705 DUP		Lab ID: 2039265004		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	16.9	ug/L	4.0	1		07/07/16 16:54	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:54	107-02-8		
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:54	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:54	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:54	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:54	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:54	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:54	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:54	75-15-0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:54	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:54	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:54	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:54	67-66-3		
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:54	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:54	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:54	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:54	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:54	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:54	10061-02-6		
Enflurane	ND	ug/L	1.0	1		07/07/16 16:54	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:54	100-41-4		
Haloether 229	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 406	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 508	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 528	ND	ug/L	1.0	1		07/07/16 16:54			
Halomar	ND	ug/L	1.0	1		07/07/16 16:54			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:54	591-78-6		
Isoflurane	ND	ug/L	1.0	1		07/07/16 16:54			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:54	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:54	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:54	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:54	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:54	79-34-5		
Tetrachloroethene	ND	ug/L	1.0	1		07/07/16 16:54	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:54	108-88-3		
Total Haloether	ND	ug/L	1.0	1		07/07/16 16:54			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	79-01-6		

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS
Pace Project No.: 2039265

Sample: EFF-20160705 DUP		Lab ID: 2039265004		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:54	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:54	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:54	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:54	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:54	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:54	95-47-6		
Surrogates									
Toluene-d8 (S)	95	%	79-119	1		07/07/16 16:54	2037-26-5		
4-Bromofluorobenzene (S)	98	%	68-124	1		07/07/16 16:54	460-00-4		
Dibromofluoromethane (S)	89	%	72-126	1		07/07/16 16:54	1868-53-7		

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WO#: 2039265

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



2039265

Section A Required Client Information:		Section C Invoice Information:	
Company: Arcadis U.S. Inc.	Report To: David Hoxford	Attention: Accounts Payable	Page: of 1947871
Address: 410 North 44th St. 1000	Copy To: Cassandra McCloud	Company Name: Arcadis	
Phone: 602-243-4518	Project Name: Fiber Public Supply Wells	Address: PO Box 1911, 0003	
Requested Due Date/TAT: 02-19-18	Project Number: (0001911.0003)	Post Quote Reference: Justin.Stock@paceair.com	
		Post Project Manager: Justin.Stock@paceair.com	
		Site Location: PR	
		STATE: PR	
		REGULATORY AGENCY: NPDES	
		<input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
		<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER CERCLA	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE Drinking Water Water Waste Water Product Solid/Solid Oil Wipe Air Tissue Other	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	PRESERVATIVES		V/N	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.						
			COMPOSITE START	COMPOSITE END/GRAB		Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other										
1	1B-20160705		DATE	TIME	DATE	TIME	# OF CONTAINERS	Analysis Test								
2	INF-20160705		7-05-16	1150	7-05-16	1150	2	X								
3	EFF-20160705		7-05-16	1230	7-05-16	1230	3	X								
4	EFFDUP-20160705		7-05-16	1230	7-05-16	1230	3	X								
5	EFFMS-20160705		7-05-16	1230	7-05-16	1230	3	X								
6	EFFMSD-20160705		7-05-16	1230	7-05-16	1230	3	X								
7																
8																
9																
10																
11																
12																
ADDITIONAL COMMENTS			RECEIVED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
CIVIL / Architects			CIVIL / Architects		7-5-16 15:00		15:00		Pace		7-5-16 15:00		15:00		20	
EFFEY			EFFEY		7-5-16 17:00		17:00		Pace		7-5-16 17:00		17:00		1.1	
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Section V Additional Comments		Section W Temp in °C		Section X Received on		Section Y Custody		Section Z Sealed Cooler		Section AA Samples Intact	

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Attachment 2
Laboratory Analytical Report #2039265

July 18, 2016

David Howard
ARCADIS
410 North 44th St.
Suite 1000
Phoenix, AZ 85008

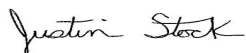
RE: Project: FIBERS PUBLIC SUPPLY WELLS
Pace Project No.: 2039265

Dear David Howard:

Enclosed are the analytical results for sample(s) received by the laboratory on July 06, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Justin L. Stock
justin.stock@pacelabs.com
Project Manager

Enclosures

cc: Janisse Diaz, Arcadis
Cassandra McCloud
Elvin Varela, ARCADIS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2039265001	TB-20160705	Water	07/05/16 00:00	07/06/16 09:00
2039265002	INF-20160705	Water	07/05/16 11:50	07/06/16 09:00
2039265003	EFF-20160705	Water	07/05/16 12:30	07/06/16 09:00
2039265004	EFF-20160705 DUP	Water	07/05/16 12:30	07/06/16 09:00

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SAMPLE ANALYTE COUNT

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2039265001	TB-20160705	EPA 5030B/8260	MLS	56	PASI-N
2039265002	INF-20160705	EPA 5030B/8260	MLS	56	PASI-N
2039265003	EFF-20160705	EPA 5030B/8260	MLS	56	PASI-N
2039265004	EFF-20160705 DUP	EPA 5030B/8260	MLS	56	PASI-N

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PROJECT NARRATIVE

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Method: EPA 5030B/8260

Description: 8260 MSV HALOETHERS

Client: ARCADIS

Date: July 18, 2016

General Information:

4 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 58330

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2039265003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 240948)
 - Acrolein
 - Ethylbenzene
 - Styrene
 - Toluene
 - Vinyl chloride
 - m&p-Xylene
 - o-Xylene
- MSD (Lab ID: 240949)
 - Acrolein
 - Ethylbenzene
 - Styrene
 - Toluene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Method: EPA 5030B/8260

Description: 8260 MSV HALOETHERS

Client: ARCADIS

Date: July 18, 2016

QC Batch: 58330

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2039265003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Vinyl chloride
- cis-1,3-Dichloropropene
- m&p-Xylene
- o-Xylene

R1: RPD value was outside control limits.

- MSD (Lab ID: 240949)
 - Carbon disulfide
 - Haloether 229
 - Vinyl chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: TB-20160705		Lab ID: 2039265001		Collected: 07/05/16 00:00		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		07/07/16 16:19	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:19	107-02-8		
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:19	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:19	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:19	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:19	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:19	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:19	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:19	75-15-0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:19	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:19	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:19	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:19	67-66-3		
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:19	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:19	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:19	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:19	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:19	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:19	10061-02-6		
Enflurane	ND	ug/L	1.0	1		07/07/16 16:19	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:19	100-41-4		
Haloether 229	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 406	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 508	ND	ug/L	1.0	1		07/07/16 16:19			
Haloether 528	ND	ug/L	1.0	1		07/07/16 16:19			
Halomar	ND	ug/L	1.0	1		07/07/16 16:19			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:19	591-78-6		
Isoflurane	ND	ug/L	1.0	1		07/07/16 16:19			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:19	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:19	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:19	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:19	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:19	79-34-5		
Tetrachloroethene	ND	ug/L	1.0	1		07/07/16 16:19	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:19	108-88-3		
Total Haloether	ND	ug/L	1.0	1		07/07/16 16:19			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:19	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:19	79-01-6		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: TB-20160705		Lab ID: 2039265001		Collected: 07/05/16 00:00		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:19	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:19	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:19	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:19	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:19	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:19	95-47-6		
Surrogates									
Toluene-d8 (S)	100	%.	79-119	1		07/07/16 16:19	2037-26-5		
4-Bromofluorobenzene (S)	98	%.	68-124	1		07/07/16 16:19	460-00-4		
Dibromofluoromethane (S)	92	%.	72-126	1		07/07/16 16:19	1868-53-7		

Sample: INF-20160705		Lab ID: 2039265002		Collected: 07/05/16 11:50		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	9.2	ug/L	4.0	1		07/07/16 16:36	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:36	107-02-8		
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:36	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:36	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:36	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:36	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:36	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:36	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:36	75-15-0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:36	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:36	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:36	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:36	67-66-3		
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:36	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:36	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:36	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:36	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:36	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:36	10061-02-6		
Enflurane	1.8	ug/L	1.0	1		07/07/16 16:36	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:36	100-41-4		
Haloether 229	30.5	ug/L	1.0	1		07/07/16 16:36			
Haloether 406	1.3	ug/L	1.0	1		07/07/16 16:36			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:36			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:36			

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: INF-20160705		Lab ID: 2039265002		Collected: 07/05/16 11:50		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:36			
Haloether 508	60.2	ug/L	1.0	1		07/07/16 16:36			
Haloether 528	1.9	ug/L	1.0	1		07/07/16 16:36			
Halomar	1.3	ug/L	1.0	1		07/07/16 16:36			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:36	591-78-6		
Isoflurane	118	ug/L	1.0	1		07/07/16 16:36			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:36	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:36	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:36	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:36	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:36	79-34-5		
Tetrachloroethene	9.3	ug/L	1.0	1		07/07/16 16:36	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:36	108-88-3		
Total Haloether	215	ug/L	1.0	1		07/07/16 16:36			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:36	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:36	79-01-6		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:36	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:36	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:36	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:36	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:36	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:36	95-47-6		
Surrogates									
Toluene-d8 (S)	99	%.	79-119	1		07/07/16 16:36	2037-26-5		
4-Bromofluorobenzene (S)	95	%.	68-124	1		07/07/16 16:36	460-00-4		
Dibromofluoromethane (S)	91	%.	72-126	1		07/07/16 16:36	1868-53-7		

Sample: EFF-20160705		Lab ID: 2039265003		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	23.8	ug/L	4.0	1		07/07/16 16:01	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:01	107-02-8	M1	
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:01	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:01	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:01	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:01	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:01	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:01	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:01	75-15-0	R1	
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:01	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:01	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:01	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:01	67-66-3		

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: EFF-20160705		Lab ID: 2039265003		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:01	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:01	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:01	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:01	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:01	10061-01-5	M1	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:01	10061-02-6		
Enflurane	ND	ug/L	1.0	1		07/07/16 16:01	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:01	100-41-4	M1	
Haloether 229	ND	ug/L	1.0	1		07/07/16 16:01		R1	
Haloether 406	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 508	ND	ug/L	1.0	1		07/07/16 16:01			
Haloether 528	ND	ug/L	1.0	1		07/07/16 16:01			
Halomar	ND	ug/L	1.0	1		07/07/16 16:01			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:01	591-78-6		
Isoflurane	ND	ug/L	1.0	1		07/07/16 16:01			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:01	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:01	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:01	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:01	100-42-5	M1	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:01	79-34-5		
Tetrachloroethene	ND	ug/L	1.0	1		07/07/16 16:01	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:01	108-88-3	M1	
Total Haloether	ND	ug/L	1.0	1		07/07/16 16:01			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:01	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:01	79-01-6		
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:01	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:01	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:01	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:01	75-01-4	M1,R1	
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:01	179601-23-1	M1	
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:01	95-47-6	M1	
Surrogates									
Toluene-d8 (S)	96	%.	79-119	1		07/07/16 16:01	2037-26-5		
4-Bromofluorobenzene (S)	96	%.	68-124	1		07/07/16 16:01	460-00-4		
Dibromofluoromethane (S)	91	%.	72-126	1		07/07/16 16:01	1868-53-7		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: EFF-20160705 DUP		Lab ID: 2039265004		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Acetone	16.9	ug/L	4.0	1		07/07/16 16:54	67-64-1		
Acrolein	ND	ug/L	8.0	1		07/07/16 16:54	107-02-8		
Acrylonitrile	ND	ug/L	4.0	1		07/07/16 16:54	107-13-1		
Benzene	ND	ug/L	1.0	1		07/07/16 16:54	71-43-2		
Bromodichloromethane	ND	ug/L	1.0	1		07/07/16 16:54	75-27-4		
Bromoform	ND	ug/L	1.0	1		07/07/16 16:54	75-25-2		
Bromomethane	ND	ug/L	1.0	1		07/07/16 16:54	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		07/07/16 16:54	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		07/07/16 16:54	75-15-0		
Carbon tetrachloride	ND	ug/L	1.0	1		07/07/16 16:54	56-23-5		
Chlorobenzene	ND	ug/L	1.0	1		07/07/16 16:54	108-90-7		
Chloroethane	ND	ug/L	1.0	1		07/07/16 16:54	75-00-3		
Chloroform	ND	ug/L	1.0	1		07/07/16 16:54	67-66-3		
Chloromethane	ND	ug/L	1.0	1		07/07/16 16:54	74-87-3		
Dibromochloromethane	ND	ug/L	1.0	1		07/07/16 16:54	124-48-1		
Dibromomethane	ND	ug/L	1.0	1		07/07/16 16:54	74-95-3		
1,1-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	75-34-3		
1,2-Dichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	107-06-2		
1,1-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	156-60-5		
1,2-Dichloropropane	ND	ug/L	1.0	1		07/07/16 16:54	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:54	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		07/07/16 16:54	10061-02-6		
Enflurane	ND	ug/L	1.0	1		07/07/16 16:54	13838-16-9		
Ethylbenzene	ND	ug/L	1.0	1		07/07/16 16:54	100-41-4		
Haloether 229	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 406	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 421	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 427	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 428	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 508	ND	ug/L	1.0	1		07/07/16 16:54			
Haloether 528	ND	ug/L	1.0	1		07/07/16 16:54			
Halomar	ND	ug/L	1.0	1		07/07/16 16:54			
2-Hexanone	ND	ug/L	2.0	1		07/07/16 16:54	591-78-6		
Isoflurane	ND	ug/L	1.0	1		07/07/16 16:54			
Methoxyflurane	ND	ug/L	1.0	1		07/07/16 16:54	76-38-0		
Methylene Chloride	ND	ug/L	5.0	1		07/07/16 16:54	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	1		07/07/16 16:54	108-10-1		
Styrene	ND	ug/L	1.0	1		07/07/16 16:54	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		07/07/16 16:54	79-34-5		
Tetrachloroethene	ND	ug/L	1.0	1		07/07/16 16:54	127-18-4		
Toluene	ND	ug/L	1.0	1		07/07/16 16:54	108-88-3		
Total Haloether	ND	ug/L	1.0	1		07/07/16 16:54			
1,1,1-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	1.0	1		07/07/16 16:54	79-00-5		
Trichloroethene	ND	ug/L	1.0	1		07/07/16 16:54	79-01-6		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Sample: EFF-20160705 DUP		Lab ID: 2039265004		Collected: 07/05/16 12:30		Received: 07/06/16 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV HALOETHERS		Analytical Method: EPA 5030B/8260							
Trichlorofluoromethane	ND	ug/L	1.0	1		07/07/16 16:54	75-69-4		
1,2,3-Trichloropropane	ND	ug/L	1.0	1		07/07/16 16:54	96-18-4		
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		07/07/16 16:54	76-13-1		
Vinyl chloride	ND	ug/L	1.0	1		07/07/16 16:54	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		07/07/16 16:54	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		07/07/16 16:54	95-47-6		
Surrogates									
Toluene-d8 (S)	95	%.	79-119	1		07/07/16 16:54	2037-26-5		
4-Bromofluorobenzene (S)	98	%.	68-124	1		07/07/16 16:54	460-00-4		
Dibromofluoromethane (S)	89	%.	72-126	1		07/07/16 16:54	1868-53-7		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

QC Batch: 58330 Analysis Method: EPA 5030B/8260

QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV

Associated Lab Samples: 2039265001, 2039265002, 2039265003, 2039265004

METHOD BLANK: 240946

Matrix: Water

Associated Lab Samples: 2039265001, 2039265002, 2039265003, 2039265004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	07/07/16 14:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	07/07/16 14:33	
1,1,2-Trichloroethane	ug/L	ND	1.0	07/07/16 14:33	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	07/07/16 14:33	
1,1-Dichloroethane	ug/L	ND	1.0	07/07/16 14:33	
1,1-Dichloroethene	ug/L	ND	1.0	07/07/16 14:33	
1,2,3-Trichloropropane	ug/L	ND	1.0	07/07/16 14:33	
1,2-Dichloroethane	ug/L	ND	1.0	07/07/16 14:33	
1,2-Dichloropropane	ug/L	ND	1.0	07/07/16 14:33	
2-Butanone (MEK)	ug/L	ND	2.0	07/07/16 14:33	
2-Hexanone	ug/L	ND	2.0	07/07/16 14:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	2.0	07/07/16 14:33	
Acetone	ug/L	ND	4.0	07/07/16 14:33	
Acrolein	ug/L	ND	8.0	07/07/16 14:33	
Acrylonitrile	ug/L	ND	4.0	07/07/16 14:33	
Benzene	ug/L	ND	1.0	07/07/16 14:33	
Bromodichloromethane	ug/L	ND	1.0	07/07/16 14:33	
Bromoform	ug/L	ND	1.0	07/07/16 14:33	
Bromomethane	ug/L	ND	1.0	07/07/16 14:33	
Carbon disulfide	ug/L	ND	1.0	07/07/16 14:33	
Carbon tetrachloride	ug/L	ND	1.0	07/07/16 14:33	
Chlorobenzene	ug/L	ND	1.0	07/07/16 14:33	
Chloroethane	ug/L	ND	1.0	07/07/16 14:33	
Chloroform	ug/L	ND	1.0	07/07/16 14:33	
Chloromethane	ug/L	ND	1.0	07/07/16 14:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	07/07/16 14:33	
cis-1,3-Dichloropropene	ug/L	ND	1.0	07/07/16 14:33	
Dibromochloromethane	ug/L	ND	1.0	07/07/16 14:33	
Dibromomethane	ug/L	ND	1.0	07/07/16 14:33	
Enflurane	ug/L	ND	1.0	07/07/16 14:33	
Ethylbenzene	ug/L	ND	1.0	07/07/16 14:33	
Haloether 229	ug/L	ND	1.0	07/07/16 14:33	
Haloether 406	ug/L	ND	1.0	07/07/16 14:33	
Haloether 421	ug/L	ND	1.0	07/07/16 14:33	
Haloether 427	ug/L	ND	1.0	07/07/16 14:33	
Haloether 428	ug/L	ND	1.0	07/07/16 14:33	
Haloether 508	ug/L	ND	1.0	07/07/16 14:33	
Haloether 528	ug/L	ND	1.0	07/07/16 14:33	
Halomar	ug/L	ND	1.0	07/07/16 14:33	
Isoflurane	ug/L	ND	1.0	07/07/16 14:33	
m&p-Xylene	ug/L	ND	2.0	07/07/16 14:33	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

METHOD BLANK: 240946

Matrix: Water

Associated Lab Samples: 2039265001, 2039265002, 2039265003, 2039265004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methoxyflurane	ug/L	ND	1.0	07/07/16 14:33	
Methylene Chloride	ug/L	ND	5.0	07/07/16 14:33	
o-Xylene	ug/L	ND	1.0	07/07/16 14:33	
Styrene	ug/L	ND	1.0	07/07/16 14:33	
Tetrachloroethene	ug/L	ND	1.0	07/07/16 14:33	
Toluene	ug/L	ND	1.0	07/07/16 14:33	
Total Haloether	ug/L	ND	1.0	07/07/16 14:33	
trans-1,2-Dichloroethene	ug/L	ND	1.0	07/07/16 14:33	
trans-1,3-Dichloropropene	ug/L	ND	1.0	07/07/16 14:33	
Trichloroethene	ug/L	ND	1.0	07/07/16 14:33	
Trichlorofluoromethane	ug/L	ND	1.0	07/07/16 14:33	
Vinyl chloride	ug/L	ND	1.0	07/07/16 14:33	
4-Bromofluorobenzene (S)	%.	97	68-124	07/07/16 14:33	
Dibromofluoromethane (S)	%.	89	72-126	07/07/16 14:33	
Toluene-d8 (S)	%.	99	79-119	07/07/16 14:33	

METHOD BLANK: 241748

Matrix: Water

Associated Lab Samples: 2039265001, 2039265002, 2039265003, 2039265004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	07/11/16 11:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	07/11/16 11:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	07/11/16 11:11	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	07/11/16 11:11	
1,1-Dichloroethane	ug/L	ND	1.0	07/11/16 11:11	
1,1-Dichloroethene	ug/L	ND	1.0	07/11/16 11:11	
1,2,3-Trichloropropane	ug/L	ND	1.0	07/11/16 11:11	
1,2-Dichloroethane	ug/L	ND	1.0	07/11/16 11:11	
1,2-Dichloropropane	ug/L	ND	1.0	07/11/16 11:11	
2-Butanone (MEK)	ug/L	ND	2.0	07/11/16 11:11	
2-Hexanone	ug/L	ND	2.0	07/11/16 11:11	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	2.0	07/11/16 11:11	
Acetone	ug/L	ND	4.0	07/11/16 11:11	
Acrolein	ug/L	ND	8.0	07/11/16 11:11	
Acrylonitrile	ug/L	ND	4.0	07/11/16 11:11	
Benzene	ug/L	ND	1.0	07/11/16 11:11	
Bromodichloromethane	ug/L	ND	1.0	07/11/16 11:11	
Bromoform	ug/L	ND	1.0	07/11/16 11:11	
Bromomethane	ug/L	ND	1.0	07/11/16 11:11	
Carbon disulfide	ug/L	ND	1.0	07/11/16 11:11	
Carbon tetrachloride	ug/L	ND	1.0	07/11/16 11:11	
Chlorobenzene	ug/L	ND	1.0	07/11/16 11:11	
Chloroethane	ug/L	ND	1.0	07/11/16 11:11	

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

METHOD BLANK: 241748

Matrix: Water

Associated Lab Samples: 2039265001, 2039265002, 2039265003, 2039265004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloroform	ug/L	ND	1.0	07/11/16 11:11	
Chloromethane	ug/L	ND	1.0	07/11/16 11:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	07/11/16 11:11	
cis-1,3-Dichloropropene	ug/L	ND	1.0	07/11/16 11:11	
Dibromochloromethane	ug/L	ND	1.0	07/11/16 11:11	
Dibromomethane	ug/L	ND	1.0	07/11/16 11:11	
Enflurane	ug/L	ND	1.0	07/11/16 11:11	
Ethylbenzene	ug/L	ND	1.0	07/11/16 11:11	
Haloether 229	ug/L	ND	1.0	07/11/16 11:11	
Haloether 406	ug/L	ND	1.0	07/11/16 11:11	
Haloether 421	ug/L	ND	1.0	07/11/16 11:11	
Haloether 427	ug/L	ND	1.0	07/11/16 11:11	
Haloether 428	ug/L	ND	1.0	07/11/16 11:11	
Haloether 508	ug/L	ND	1.0	07/11/16 11:11	
Haloether 528	ug/L	ND	1.0	07/11/16 11:11	
Halomar	ug/L	ND	1.0	07/11/16 11:11	
Isoflurane	ug/L	ND	1.0	07/11/16 11:11	
m&p-Xylene	ug/L	ND	2.0	07/11/16 11:11	
Methoxyflurane	ug/L	ND	1.0	07/11/16 11:11	
Methylene Chloride	ug/L	ND	5.0	07/11/16 11:11	
o-Xylene	ug/L	ND	1.0	07/11/16 11:11	
Styrene	ug/L	ND	1.0	07/11/16 11:11	
Tetrachloroethene	ug/L	ND	1.0	07/11/16 11:11	
Toluene	ug/L	ND	1.0	07/11/16 11:11	
Total Haloether	ug/L	ND	1.0	07/11/16 11:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	07/11/16 11:11	
trans-1,3-Dichloropropene	ug/L	ND	1.0	07/11/16 11:11	
Trichloroethene	ug/L	ND	1.0	07/11/16 11:11	
Trichlorofluoromethane	ug/L	ND	1.0	07/11/16 11:11	
Vinyl chloride	ug/L	ND	1.0	07/11/16 11:11	
4-Bromofluorobenzene (S)	%	98	68-124	07/11/16 11:11	
Dibromofluoromethane (S)	%	91	72-126	07/11/16 11:11	
Toluene-d8 (S)	%	99	79-119	07/11/16 11:11	

LABORATORY CONTROL SAMPLE: 240947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.7	99	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.2	94	15-179	
1,1,2-Trichloroethane	ug/L	50	51.9	104	58-144	
1,1,2-Trichlorotrifluoroethane	ug/L	50	37.1	74	38-121	
1,1-Dichloroethane	ug/L	50	44.4	89	63-129	
1,1-Dichloroethene	ug/L	50	39.2	78	51-139	
1,2,3-Trichloropropane	ug/L	50	50.3	101	13-187	

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

LABORATORY CONTROL SAMPLE: 240947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	48.5	97	57-148	
1,2-Dichloropropane	ug/L	50	47.6	95	66-128	
2-Butanone (MEK)	ug/L	50	51.3	103	32-183	
2-Hexanone	ug/L	50	55.2	110	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.8	108	26-171	
Acetone	ug/L	50	52.3	105	22-165	
Acrolein	ug/L	100	104	104	10-131	
Acrylonitrile	ug/L	50	51.3	103	18-149	
Benzene	ug/L	50	49.3	99	62-131	
Bromodichloromethane	ug/L	50	49.4	99	69-132	
Bromoform	ug/L	50	48.3	97	35-166	
Bromomethane	ug/L	50	47.9	96	34-158	
Carbon disulfide	ug/L	50	36.2	72	31-128	
Carbon tetrachloride	ug/L	50	48.2	96	54-144	
Chlorobenzene	ug/L	50	48.6	97	70-127	
Chloroethane	ug/L	50	44.2	88	17-195	
Chloroform	ug/L	50	46.0	92	73-134	
Chloromethane	ug/L	50	49.9	100	17-153	
cis-1,2-Dichloroethene	ug/L	50	47.7	95	68-129	
cis-1,3-Dichloropropene	ug/L	50	49.1	98	72-138	
Dibromochloromethane	ug/L	50	46.3	93	49-146	
Dibromomethane	ug/L	50	51.9	104	56-145	
Enflurane	ug/L	50	47.9	96	56-135	
Ethylbenzene	ug/L	50	48.0	96	66-126	
Haloether 229	ug/L	50	37.6	75	62-123	
Haloether 406	ug/L	50	47.9	96	62-134	
Haloether 421	ug/L	50	51.9	104	70-128	
Haloether 427	ug/L	50	52.9	106	69-153	
Haloether 428	ug/L	50	49.7	99	70-134	
Haloether 508	ug/L	50	49.0	98	52-139	
Haloether 528	ug/L	50	55.1	110	48-157	
Halomar	ug/L	50	48.8	98	62-128	
Isoflurane	ug/L	50	49.2	98	61-132	
m&p-Xylene	ug/L	100	95.3	95	65-129	
Methoxyflurane	ug/L	50	51.2	102	72-124	
Methylene Chloride	ug/L	50	47.8	96	46-168	
o-Xylene	ug/L	50	48.2	96	65-124	
Styrene	ug/L	50	48.8	98	72-133	
Tetrachloroethene	ug/L	50	46.3	93	46-157	
Toluene	ug/L	50	51.0	102	69-126	
Total Haloether	ug/L		541			
trans-1,2-Dichloroethene	ug/L	50	44.4	89	60-129	
trans-1,3-Dichloropropene	ug/L	50	52.1	104	59-149	
Trichloroethene	ug/L	50	48.0	96	67-132	
Trichlorofluoromethane	ug/L	50	50.4	101	39-171	
Vinyl chloride	ug/L	50	41.2	82	27-149	
4-Bromofluorobenzene (S)	%			100	68-124	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

LABORATORY CONTROL SAMPLE: 240947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromofluoromethane (S)	%.			98	72-126	
Toluene-d8 (S)	%.			101	79-119	

LABORATORY CONTROL SAMPLE: 241749

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.2	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	43.7	87	15-179	
1,1,2-Trichloroethane	ug/L	50	50.1	100	58-144	
1,1,2-Trichlorotrifluoroethane	ug/L	50	41.2	82	38-121	
1,1-Dichloroethane	ug/L	50	44.6	89	63-129	
1,1-Dichloroethene	ug/L	50	43.5	87	51-139	
1,2,3-Trichloropropane	ug/L	50	47.4	95	13-187	
1,2-Dichloroethane	ug/L	50	48.7	97	57-148	
1,2-Dichloropropane	ug/L	50	45.5	91	66-128	
2-Butanone (MEK)	ug/L	50	49.0	98	32-183	
2-Hexanone	ug/L	50	54.3	109	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	51.9	104	26-171	
Acetone	ug/L	50	50.4	101	22-165	
Acrolein	ug/L	100	121	121	10-131	
Acrylonitrile	ug/L	50	49.1	98	18-149	
Benzene	ug/L	50	48.4	97	62-131	
Bromodichloromethane	ug/L	50	49.1	98	69-132	
Bromoform	ug/L	50	50.0	100	35-166	
Bromomethane	ug/L	50	52.8	106	34-158	
Carbon disulfide	ug/L	50	39.5	79	31-128	
Carbon tetrachloride	ug/L	50	50.7	101	54-144	
Chlorobenzene	ug/L	50	50.0	100	70-127	
Chloroethane	ug/L	50	48.1	96	17-195	
Chloroform	ug/L	50	47.8	96	73-134	
Chloromethane	ug/L	50	49.9	100	17-153	
cis-1,2-Dichloroethene	ug/L	50	49.2	98	68-129	
cis-1,3-Dichloropropene	ug/L	50	49.1	98	72-138	
Dibromochloromethane	ug/L	50	47.8	96	49-146	
Dibromomethane	ug/L	50	50.8	102	56-145	
Enflurane	ug/L	50	50.8	102	56-135	
Ethylbenzene	ug/L	50	48.9	98	66-126	
Haloether 229	ug/L	50	48.1	96	62-123	
Haloether 406	ug/L	50	52.5	105	62-134	
Haloether 421	ug/L	50	49.9	100	70-128	
Haloether 427	ug/L	50	55.1	110	69-153	
Haloether 428	ug/L	50	50.9	102	70-134	
Haloether 508	ug/L	50	51.7	103	52-139	
Haloether 528	ug/L	50	58.0	116	48-157	
Halomar	ug/L	50	50.3	101	62-128	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

LABORATORY CONTROL SAMPLE: 241749

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isoflurane	ug/L	50	52.4	105	61-132	
m&p-Xylene	ug/L	100	100	100	65-129	
Methoxyflurane	ug/L	50	49.4	99	72-124	
Methylene Chloride	ug/L	50	46.7	93	46-168	
o-Xylene	ug/L	50	50.0	100	65-124	
Styrene	ug/L	50	50.1	100	72-133	
Tetrachloroethene	ug/L	50	49.1	98	46-157	
Toluene	ug/L	50	50.4	101	69-126	
Total Haloether	ug/L		569			
trans-1,2-Dichloroethene	ug/L	50	46.1	92	60-129	
trans-1,3-Dichloropropene	ug/L	50	52.1	104	59-149	
Trichloroethene	ug/L	50	48.8	98	67-132	
Trichlorofluoromethane	ug/L	50	58.5	117	39-171	
Vinyl chloride	ug/L	50	43.9	88	27-149	
4-Bromofluorobenzene (S)	%			98	68-124	
Dibromofluoromethane (S)	%			100	72-126	
Toluene-d8 (S)	%			100	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 240948 240949

Parameter	Units	2039265003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	53.8	48.1	108	96	54-137	11	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	47.0	45.6	94	91	15-187	3	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	52.1	51.0	104	102	59-148	2	20	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	50	50	36.5	31.8	73	64	40-117	14	20	
1,1-Dichloroethane	ug/L	ND	50	50	46.8	43.0	94	86	59-133	8	20	
1,1-Dichloroethene	ug/L	ND	50	50	31.7	28.5	63	57	44-146	11	20	
1,2,3-Trichloropropane	ug/L	ND	50	50	48.9	47.1	98	94	14-199	4	20	
1,2-Dichloroethane	ug/L	ND	50	50	47.8	45.4	96	91	56-154	5	20	
1,2-Dichloropropane	ug/L	ND	50	50	48.9	45.7	98	91	62-135	7	20	
2-Butanone (MEK)	ug/L	ND	50	50	50.7	49.7	100	98	20-205	2	20	
2-Hexanone	ug/L	ND	50	50	53.5	52.6	107	105	25-189	2	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	50.8	51.0	102	102	23-184	0	20	
Acetone	ug/L	23.8	50	50	57.8	57.2	68	67	11-217	1	20	
Acrolein	ug/L	ND	100	100	ND	ND	1	1	10-142		20	M1
Acrylonitrile	ug/L	ND	50	50	48.1	46.3	96	93	20-164	4	20	
Benzene	ug/L	ND	50	50	51.5	48.2	103	96	52-141	7	20	
Bromodichloromethane	ug/L	ND	50	50	49.5	47.0	99	94	70-134	5	20	
Bromoform	ug/L	ND	50	50	51.0	48.4	101	96	37-171	5	20	
Bromomethane	ug/L	ND	50	50	50.3	42.2	101	84	34-155	17	20	
Carbon disulfide	ug/L	ND	50	50	42.0	34.0	84	68	28-130	21	20	R1
Carbon tetrachloride	ug/L	ND	50	50	51.0	47.0	102	94	48-146	8	20	
Chlorobenzene	ug/L	ND	50	50	50.5	47.9	101	96	67-129	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 240948											
240949											
Parameter	Units	2039265003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Chloroethane	ug/L	ND	50	50	47.0	41.3	94	83	12-192	13	20
Chloroform	ug/L	ND	50	50	47.3	43.9	95	88	66-143	8	20
Chloromethane	ug/L	ND	50	50	55.4	47.9	110	95	14-155	15	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	49.7	45.8	99	92	56-141	8	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	35.4	34.2	71	68	70-139	3	20 M1
Dibromochloromethane	ug/L	ND	50	50	45.8	44.7	92	89	50-150	2	20
Dibromomethane	ug/L	ND	50	50	50.6	49.4	101	99	58-153	2	20
Enflurane	ug/L	ND	50	50	49.7	44.8	99	90	63-126	10	20
Ethylbenzene	ug/L	ND	50	50	23.8	22.0	48	44	57-135	8	20 M1
Haloether 229	ug/L	ND	50	50	47.8	35.5	96	71	56-127	30	20 R1
Haloether 406	ug/L	ND	50	50	47.5	41.9	95	84	68-128	12	20
Haloether 421	ug/L	ND	50	50	52.3	49.3	105	99	74-120	6	20
Haloether 427	ug/L	ND	50	50	54.0	50.6	108	101	78-120	7	20
Haloether 428	ug/L	ND	50	50	51.3	48.2	103	96	74-125	6	20
Haloether 508	ug/L	ND	50	50	48.5	41.7	97	83	28-156	15	20
Haloether 528	ug/L	ND	50	50	48.7	45.4	97	91	45-142	7	20
Halomar	ug/L	ND	50	50	51.5	47.2	103	94	67-123	9	20
Isoflurane	ug/L	ND	50	50	51.5	45.6	103	91	45-140	12	20
m&p-Xylene	ug/L	ND	100	100	19.8	18.3	20	18	56-136	8	20 M1
Methoxyflurane	ug/L	ND	50	50	51.2	48.8	102	98	75-119	5	20
Methylene Chloride	ug/L	ND	50	50	46.9	42.3	94	85	45-166	10	20
o-Xylene	ug/L	ND	50	50	.53J	ND	1	1	57-133		20 M1
Styrene	ug/L	ND	50	50	ND	1.6	0	3	58-144		20 M1
Tetrachloroethene	ug/L	ND	50	50	49.1	45.4	98	91	48-143	8	20
Toluene	ug/L	ND	50	50	21.2	19.5	42	39	59-136	8	20 M1
Total Haloether	ug/L	ND			554	499				10	
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.6	42.8	95	86	57-132	11	20
trans-1,3-Dichloropropene	ug/L	ND	50	50	38.2	36.4	76	73	59-154	5	20
Trichloroethene	ug/L	ND	50	50	50.9	46.7	102	93	58-140	9	20
Trichlorofluoromethane	ug/L	ND	50	50	51.7	44.5	103	89	24-175	15	20
Vinyl chloride	ug/L	ND	50	50	2.6	2.0	5	4	21-150	25	20 M1, R1
4-Bromofluorobenzene (S)	%.						100	100	68-124		
Dibromofluoromethane (S)	%.						97	97	72-126		
Toluene-d8 (S)	%.						101	101	79-119		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FIBERS PUBLIC SUPPLY WELLS

Pace Project No.: 2039265

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2039265001	TB-20160705	EPA 5030B/8260	58330		
2039265002	INF-20160705	EPA 5030B/8260	58330		
2039265003	EFF-20160705	EPA 5030B/8260	58330		
2039265004	EFF-20160705 DUP	EPA 5030B/8260	58330		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



2039265

Civilian

Required Project Information:

Section 2

Company:	Arcadis U.S. Inc.	Report To:	David Howard	Attention:	Accountants Payable	1947871
Address:	410 North 44th St. 1000 Phoenix, AZ 85008	Copy To:	Cassandra McCloud	Company Name:	Arcadis	
Email To:	david.howard@arcadisusa.com	Purchase Order No.:	Cassandra.mccloud@arcadis-us.com	Address:		
Phone:	602-797-4518	Project Name:	Fibers Public Supply Wells	Pace Quote Reference:	CO001911.0003	
Requested Due Date/TAT:			Project Number:	CO001911.0003	Pace Project Manager:	Justin.Stock@pacelabs.com
				Pace Profile #:		

[illegible]

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	CVN / Acadia	7-5-16	15:00	CVN	7-5-16	15:10	20
	CVN / Acadia	7-5-16	17:00	FedEx			20
	FedEx	7/6/16	900	Ywr Pace	7/6/16	900	1.1
							1.7
							2.4

ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:					
DATE Signed (MM/DD/YYYY):					

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

WO#: 2039265

PM: JLS

Due Date: 07/20/16

CLIENT: 20-CHEV-ARC



1000 Riverband, Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Re

Project #: **20**

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Thermometer
Used:

- ☐ Therm Fisher IR 5
☐ Therm Fisher IR 6
☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining
contents: 7-7-16

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Attachment 3
GWETS Sampling and Monitoring Field Form, July 5, 2016

Groundwater Extraction and Treatment System (GWETS) Sampling and Monitoring Field Form
Fibers Public Supply Wells Superfund Site
Guayama, Puerto Rico

Collection Date	Sample ID	Collection Time	Sampler's Initials
July 5, 2016	INF-20160705	1150	EDR
July 5, 2016	EFF-20160705	1230	EDR
July 5, 2016	EFFDUP-20160705	1230	EDR
July 5, 2016	EFFMS-20160705	1230	EDR
July 5, 2016	EFFMSD-20160705	1230	EDR
July 5, 2016	TB-20160705	LAB	EDR

GWETS Operational Data at Sample Collection

Extraction Wells

RW-2	115.2	gpm
RW-4	144.6	gpm
RW-5	74.9	gpm

Compound Treatment System

Influent Flow Rate (FIT-101)	333.3	gpm
Effluent Flow Rate (FIT-301)	361.9	gpm
Blower (FIT-201A)	2474	cfm
Influent Flow Pressure (PIT-101)	3.3	psi
Effluent Flow Pressure (PIT-301)	13.2	psi
pH (PHIT-201A)	8.1	

Notes:

gpm = gallons per minute

cfm = cubic feet per minute

psi = pounds per square inch

Attachment 4
GWETS Influent and Effluent Sampling Results, July 11, 2016

Table D-1
GWETS Influent and Effluent Sampling Results
July 11, 2016
 Fibers Public Supply Wells Superfund Site
 Guayama, Puerto Rico

Parameter	1990 PR Water Quality Standard - Superficial Waters (SD)	Influent Sample (July 11, 2016)	Effluent Sample (July 11, 2016)
Total Metals (µg/L)			
Arsenic	50	<50	<50
Barium	1,000	<1,000	<1,000
Beryllium	0.068	<0.50	<0.50
Boron	1,000	<1,000	<1,000
Cadmium ¹	2.0	<2.0	<2.0
Chromium	50.0	<50.0	<50.0
Copper ¹	21.8	<21.8	<21.8
Lead ¹	7.9	<7.9	<7.9
Manganese	50.0	<50.0	<50.0
Mercury	1.0	<1.0	<1.0
Nickel ¹	289.4	<289.4	<289.4
Selenium	10.0	<10.0	<10.0
Silver	2.0	<2.0	<2.0
Zinc	50	<50.0	<50.0
Other Inorganics (µg/L)			
Nitrate + Nitrite	10,000	<10,000	<10,000
Cyanide	20.0	31.0	<20.0
Fluoride	700.0	<700.0	<700.0
Sulfate	250,000	<250,000	<250,000
Sulfide	2.0	<20.0 UJ	<20.0

Notes:

µg/L = micrograms per liter.

UJ = The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

¹ Calculated standard based on hardness value of 205 mg/L.

Fibers Group

Data Review

GUAYAMA, PUERTO RICO

Metals and Miscellaneous Analyses

SDG #2039549

Analyses Performed By:
Pace Analytical Services, Inc.
New Orleans, Louisiana

Report: #25959R
Review Level: Tier II
Project: CO001911.0003.1605A

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #2039549 for samples collected in association with the Fibers Group Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	TPH	MET	MISC
INF-(20160711)	2039549001	Water	07/11/2016					X	X
EFF-(20160711)	2039549003	Water	07/11/2016					X	X

Note:

1. The proper sample containers were not provided for EPA Method 1631 (low level Mercury) therefore, EPA Method 200.8 was performed for Mercury analysis.
2. A matrix spike(MS)/laboratory duplicate analysis was performed on sample location INF-(20160711) for Sulfide.
3. Miscellaneous analyses include Total Cyanide, Total Hardness, Fluoride, Nitrate-Nitrite, Sulfide, Sulfate and TKN..

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 6010, EPA Methods 200.8, 300.0 and 351.2, Standard Methods (SM) 2340C, 4500 CN-E, 4500 NO3-F and 4500 S-2D and ASTM D516-90,02. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

- U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
- B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

- E The reported value is estimated due to the presence of interference.
- N Spiked sample recovery is not within control limits.
- * Duplicate analysis is not within control limits.

- Validation Qualifiers

- J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
- UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
- UB Analyte considered non-detect at the listed value due to associated blank contamination.
- R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010	Water	180 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2 s.u.
EPA 200.8 (except Hg)			
EPA 200.8 (Hg only)	Water	28 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2 s.u.

The samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the RL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis exhibited recoveries within the control limits.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed in replacement of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPD.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not performed on a sample location associated with this SDG.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010, EPA 200.8	Reported		Performance Acceptable		Not Required	
	No	Yes	No	Yes		
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP)						
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)						
Tier II Validation						
Holding Times		X		X		
Reporting limits (units)		X		X		
Blanks						
A. Method Blanks		X		X		
B. Equipment/Field Blanks					X	
Laboratory Control Sample (LCS)		X		X		
Matrix Spike (MS) %R		X		X		
Matrix Spike Duplicate (MSD) %R		X		X		
MS/MSD Precision (RPD)		X		X		
Field/Lab Duplicate (RPD)					X	
Reporting Limit Verification					X	
Raw Data					X	

%R Percent recovery

RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Fluoride by EPA 300.0	Water	28 days from collection to analysis	Cool to <6 °C.
Sulfate by ASTM D516-90,02	Water	28 days from collection to analysis	Cool to <6 °C.
Total Hardness by SM 2340C	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Nitrate+Nitrite by SM 4500 NO3-F	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.
SM 4500 CN-E (Cyanide, Total)	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of greater than 12.
SM 4500 S-2 D (Sulfide, Total)	Water	7 days from collection to analysis	Zinc acetate; preserved to a pH of greater than 9
EPA 351.2 (TKN)	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the RL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%.

The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

All analytes associated with MS recoveries were within control limits with the exception of the following analytes present in the table below.

Sample Location	Analytes	MS Recovery
INF-(20160711)	Sulfide	41%

The criteria used to evaluate MS recoveries are presented in the following table. In the case of an MS deviation, the sample results are qualified. The qualifications are applied to the parent sample result associated with this SDG.

Control limit	Sample Result	Qualification
MS percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS percent recovery <30%	Non-detect	R
	Detect	J
MS percent recovery >125%	Non-detect	No Action
	Detect	J

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not performed on a sample location associated with this SDG.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery

between the control limits of 80% and 120%.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

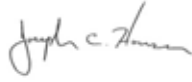
DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: Miscellaneous Methods	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content					X

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference,
 %D – difference

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE:



DATE: July 24, 2016

PEER REVIEW: Dennis Capria

DATE: July 28, 2016

**CHAIN OF CUSTODY/
ANNOTATED SAMPLE ANALYSIS DATA SHEETS**

ANALYTICAL RESULTS

Project: Fibers Project
Pace Project No.: 2039549

Sample: INF-(20160711)		Lab ID: 2039549001		Collected: 07/11/16 11:40		Received: 07/12/16 11:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 Metals, Total		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Sulfur	10400	ug/L	100	1	07/14/16 08:22	07/15/16 18:19			
200.8 Metals, Total		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-38-2		
Barium	15.0	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-39-3		
Beryllium	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:11	7440-41-7		
Boron	99.9	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:11	7440-42-8		
Cadmium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-43-9		
Chromium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-47-3		
Copper	ND	ug/L	3.0	1	07/14/16 10:49	07/14/16 15:11	7440-50-8		
Lead	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7439-92-1		
Manganese	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7439-96-5		
Mercury	ND	ug/L	0.20	1	07/14/16 10:49	07/14/16 15:11	7439-97-6		
Nickel	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-02-0		
Selenium	1.4	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7782-49-2		
Silver	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:11	7440-22-4		
Zinc	ND	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:11	7440-66-6		
2340C Hardness, Total		Analytical Method: SM 2340C							
Total Hardness	208	mg/L	5.0	1		07/15/16 10:34			
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	ND	mg/L	0.020	1		07/14/16 11:14	18496-25-8	Mt J	
Total Nitrogen Calculation		Analytical Method: 40CFR PART 432.2							
Nitrogen	1.2	mg/L	1.0	1		07/19/16 13:30	7727-37-9		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.32	mg/L	0.10	1		07/13/16 16:07	16984-48-8		
351.2 Total Kjeldahl Nitrogen		Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	0.25	mg/L	0.10	1	07/15/16 10:50	07/16/16 13:48	7727-37-9		
4500CNE Cyanide, Total		Analytical Method: SM 4500-CN-E Preparation Method: SM 4500-CN-C							
Cyanide	0.031	mg/L	0.010	1	07/18/16 13:30	07/19/16 10:35	57-12-5		
4500NO3-F, NO3-NO2		Analytical Method: SM 4500-NO3 F							
Nitrogen, NO2 plus NO3	0.94	mg/L	0.050	1		07/15/16 15:34			
ASTM D516-9002 Sulfate Water		Analytical Method: ASTM D516-90,02							
Sulfate	34.6	mg/L	1.0	1		07/14/16 15:11	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Fibers Project
Pace Project No.: 2039549

Sample: EFF-(20160711)		Lab ID: 2039549003		Collected: 07/11/16 12:03		Received: 07/12/16 11:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 Metals, Total		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Sulfur	10600	ug/L	100	1	07/14/16 08:22	07/15/16 18:23			
200.8 Metals, Total		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-38-2		
Barium	14.9	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-39-3		
Beryllium	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:15	7440-41-7		
Boron	96.9	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:15	7440-42-8		
Cadmium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-43-9		
Chromium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-47-3		
Copper	ND	ug/L	3.0	1	07/14/16 10:49	07/14/16 15:15	7440-50-8		
Lead	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7439-92-1		
Manganese	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7439-96-5		
Mercury	ND	ug/L	0.20	1	07/14/16 10:49	07/14/16 15:15	7439-97-6		
Nickel	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-02-0		
Selenium	1.4	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7782-49-2		
Silver	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:15	7440-22-4		
Zinc	ND	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:15	7440-66-6		
2340C Hardness, Total		Analytical Method: SM 2340C							
Total Hardness	202	mg/L	5.0	1		07/15/16 10:42			
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	ND	mg/L	0.020	1		07/14/16 11:16	18496-25-8		
Total Nitrogen Calculation		Analytical Method: 40CFR PART 432.2							
Nitrogen	1.1	mg/L	1.0	1		07/19/16 13:30	7727-37-9		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.29	mg/L	0.10	1		07/13/16 16:07	16984-48-8		
351.2 Total Kjeldahl Nitrogen		Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	0.16	mg/L	0.10	1	07/15/16 10:50	07/16/16 13:49	7727-37-9		
4500CNE Cyanide, Total		Analytical Method: SM 4500-CN-E Preparation Method: SM 4500-CN-C							
Cyanide	ND	mg/L	0.010	1	07/18/16 13:30	07/19/16 10:40	57-12-5		
4500NO3-F, NO3-NO2		Analytical Method: SM 4500-NO3 F							
Nitrogen, NO2 plus NO3	0.89	mg/L	0.050	1		07/15/16 15:37			
ASTM D516-9002 Sulfate Water		Analytical Method: ASTM D516-90,02							
Sulfate	35.1	mg/L	1.0	1		07/14/16 15:11	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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July 20, 2016

David Howard
ARCADIS
410 North 44th St.
Suite 1000
Phoenix, AZ 85008

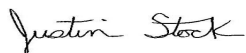
RE: Project: Fibers Project
Pace Project No.: 2039549

Dear David Howard:

Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Justin L. Stock
justin.stock@pacelabs.com
Project Manager

Enclosures

cc: Janisse Diaz, Arcadis
Cassandra McCloud
Elvin Varela, ARCADIS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Fibers Project

Pace Project No.: 2039549

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Fibers Project

Pace Project No.: 2039549

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2039549001	INF-(20160711)	Water	07/11/16 11:40	07/12/16 11:00
2039549003	EFF-(20160711)	Water	07/11/16 12:03	07/12/16 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Fibers Project

Pace Project No.: 2039549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2039549001	INF-(20160711)	EPA 6010	MHB1	1	PASI-N
		EPA 200.8	KJR	14	PASI-N
		SM 2340C	SMS2	1	PASI-N
		SM 4500-S-2 D	SMS2	1	PASI-N
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 300.0	SMS2	1	PASI-N
		EPA 351.2	CN	1	PASI-N
		SM 4500-CN-E	SMS2	1	PASI-N
		SM 4500-NO3 F	CN	1	PASI-N
		ASTM D516-90,02	SMS2	1	PASI-N
2039549003	EFF-(20160711)	EPA 6010	MHB1	1	PASI-N
		EPA 200.8	KJR	14	PASI-N
		SM 2340C	SMS2	1	PASI-N
		SM 4500-S-2 D	SMS2	1	PASI-N
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 300.0	SMS2	1	PASI-N
		EPA 351.2	CN	1	PASI-N
		SM 4500-CN-E	SMS2	1	PASI-N
		SM 4500-NO3 F	CN	1	PASI-N
		ASTM D516-90,02	SMS2	1	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: EPA 6010

Description: 6010 Metals, Total

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: EPA 200.8

Description: 200.8 Metals, Total

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: SM 2340C

Description: 2340C Hardness, Total

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for SM 2340C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 58683

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2039549001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 243166)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: 40CFR PART 432.2

Description: Total Nitrogen Calculation

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for 40CFR PART 432.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: EPA 351.2

Description: 351.2 Total Kjeldahl Nitrogen

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for EPA 351.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 58966

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 243555)
- Nitrogen, Kjeldahl, Total

Additional Comments:

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: SM 4500-CN-E

Description: 4500CNE Cyanide, Total

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with SM 4500-CN-C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: SM 4500-NO3 F

Description: 4500NO3-F, NO3-NO2

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for SM 4500-NO3 F. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Fibers Project

Pace Project No.: 2039549

Method: ASTM D516-90,02

Description: ASTM D516-9002 Sulfate Water

Client: ARCADIS

Date: July 20, 2016

General Information:

2 samples were analyzed for ASTM D516-90,02. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 58857

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2039594001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 243025)
- Sulfate

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Fibers Project
Pace Project No.: 2039549

Sample: INF-(20160711)		Lab ID: 2039549001		Collected: 07/11/16 11:40		Received: 07/12/16 11:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 Metals, Total		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Sulfur	10400	ug/L	100	1	07/14/16 08:22	07/15/16 18:19			
200.8 Metals, Total		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-38-2		
Barium	15.0	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-39-3		
Beryllium	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:11	7440-41-7		
Boron	99.9	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:11	7440-42-8		
Cadmium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-43-9		
Chromium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-47-3		
Copper	ND	ug/L	3.0	1	07/14/16 10:49	07/14/16 15:11	7440-50-8		
Lead	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7439-92-1		
Manganese	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7439-96-5		
Mercury	ND	ug/L	0.20	1	07/14/16 10:49	07/14/16 15:11	7439-97-6		
Nickel	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7440-02-0		
Selenium	1.4	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:11	7782-49-2		
Silver	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:11	7440-22-4		
Zinc	ND	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:11	7440-66-6		
2340C Hardness, Total		Analytical Method: SM 2340C							
Total Hardness	208	mg/L	5.0	1		07/15/16 10:34			
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	ND	mg/L	0.020	1		07/14/16 11:14	18496-25-8	M1	
Total Nitrogen Calculation		Analytical Method: 40CFR PART 432.2							
Nitrogen	1.2	mg/L	1.0	1		07/19/16 13:30	7727-37-9		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.32	mg/L	0.10	1		07/13/16 16:07	16984-48-8		
351.2 Total Kjeldahl Nitrogen		Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	0.25	mg/L	0.10	1	07/15/16 10:50	07/16/16 13:48	7727-37-9		
4500CNE Cyanide, Total		Analytical Method: SM 4500-CN-E Preparation Method: SM 4500-CN-C							
Cyanide	0.031	mg/L	0.010	1	07/18/16 13:30	07/19/16 10:35	57-12-5		
4500NO3-F, NO3-NO2		Analytical Method: SM 4500-NO3 F							
Nitrogen, NO2 plus NO3	0.94	mg/L	0.050	1		07/15/16 15:34			
ASTM D516-9002 Sulfate Water		Analytical Method: ASTM D516-90,02							
Sulfate	34.6	mg/L	1.0	1		07/14/16 15:11	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Fibers Project
Pace Project No.: 2039549

Sample: EFF-(20160711)		Lab ID: 2039549003		Collected: 07/11/16 12:03		Received: 07/12/16 11:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 Metals, Total		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Sulfur	10600	ug/L	100	1	07/14/16 08:22	07/15/16 18:23			
200.8 Metals, Total		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-38-2		
Barium	14.9	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-39-3		
Beryllium	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:15	7440-41-7		
Boron	96.9	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:15	7440-42-8		
Cadmium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-43-9		
Chromium	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-47-3		
Copper	ND	ug/L	3.0	1	07/14/16 10:49	07/14/16 15:15	7440-50-8		
Lead	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7439-92-1		
Manganese	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7439-96-5		
Mercury	ND	ug/L	0.20	1	07/14/16 10:49	07/14/16 15:15	7439-97-6		
Nickel	ND	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7440-02-0		
Selenium	1.4	ug/L	1.0	1	07/14/16 10:49	07/14/16 15:15	7782-49-2		
Silver	ND	ug/L	0.50	1	07/14/16 10:49	07/14/16 15:15	7440-22-4		
Zinc	ND	ug/L	5.0	1	07/14/16 10:49	07/14/16 15:15	7440-66-6		
2340C Hardness, Total		Analytical Method: SM 2340C							
Total Hardness	202	mg/L	5.0	1		07/15/16 10:42			
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	ND	mg/L	0.020	1		07/14/16 11:16	18496-25-8		
Total Nitrogen Calculation		Analytical Method: 40CFR PART 432.2							
Nitrogen	1.1	mg/L	1.0	1		07/19/16 13:30	7727-37-9		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Fluoride	0.29	mg/L	0.10	1		07/13/16 16:07	16984-48-8		
351.2 Total Kjeldahl Nitrogen		Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	0.16	mg/L	0.10	1	07/15/16 10:50	07/16/16 13:49	7727-37-9		
4500CNE Cyanide, Total		Analytical Method: SM 4500-CN-E Preparation Method: SM 4500-CN-C							
Cyanide	ND	mg/L	0.010	1	07/18/16 13:30	07/19/16 10:40	57-12-5		
4500NO3-F, NO3-NO2		Analytical Method: SM 4500-NO3 F							
Nitrogen, NO2 plus NO3	0.89	mg/L	0.050	1		07/15/16 15:37			
ASTM D516-9002 Sulfate Water		Analytical Method: ASTM D516-90,02							
Sulfate	35.1	mg/L	1.0	1		07/14/16 15:11	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch:	58896	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
Associated Lab Samples: 2039549001, 2039549003			

METHOD BLANK: 243155 Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	1.0	07/14/16 14:01	
Barium	ug/L	ND	1.0	07/14/16 14:01	
Beryllium	ug/L	ND	0.50	07/14/16 14:01	
Boron	ug/L	ND	5.0	07/14/16 14:01	
Cadmium	ug/L	ND	1.0	07/14/16 14:01	
Chromium	ug/L	ND	1.0	07/14/16 14:01	
Copper	ug/L	ND	3.0	07/14/16 14:01	
Lead	ug/L	ND	1.0	07/14/16 14:01	
Manganese	ug/L	ND	1.0	07/14/16 14:01	
Mercury	ug/L	ND	0.20	07/14/16 14:01	
Nickel	ug/L	ND	1.0	07/14/16 14:01	
Selenium	ug/L	ND	1.0	07/14/16 14:01	
Silver	ug/L	ND	0.50	07/14/16 14:01	
Zinc	ug/L	ND	5.0	07/14/16 14:01	

LABORATORY CONTROL SAMPLE: 243156

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	20	21.4	107	85-115	
Barium	ug/L	20	20.5	103	85-115	
Beryllium	ug/L	20	21.5	108	85-115	
Boron	ug/L	20	20.0	100	85-115	
Cadmium	ug/L	20	20.6	103	85-115	
Chromium	ug/L	20	20.8	104	85-115	
Copper	ug/L	20	21.6	108	85-115	
Lead	ug/L	20	19.8	99	85-115	
Manganese	ug/L	20	21.0	105	85-115	
Mercury	ug/L	4	4.0	99	85-115	
Nickel	ug/L	20	21.2	106	85-115	
Selenium	ug/L	20	21.3	106	85-115	
Silver	ug/L	20	20.5	102	85-115	
Zinc	ug/L	20	22.4	112	85-115	

MATRIX SPIKE SAMPLE: 243158

Parameter	Units	2039550001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	0.0022 mg/L	20	23.1	105	70-130	
Barium	ug/L	0.093 mg/L	20	116	114	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Fibers Project
Pace Project No.: 2039549

MATRIX SPIKE SAMPLE: 243158		2039550001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Beryllium	ug/L	ND	20	21.4	107	70-130	
Boron	ug/L	158	20	181	114	70-130	
Cadmium	ug/L	ND	20	20.8	103	70-130	
Chromium	ug/L	0.0023 mg/L	20	23.1	104	70-130	
Copper	ug/L	0.035 mg/L	20	60.5	126	70-130	
Lead	ug/L	0.0047 mg/L	20	24.8	100	70-130	
Manganese	ug/L	268	20	290	110	70-130	
Mercury	ug/L	ND	4	4.1	100	70-130	
Nickel	ug/L	0.0049 mg/L	20	24.9	100	70-130	
Selenium	ug/L	ND	20	18.0	88	70-130	
Silver	ug/L	ND	20	19.8	98	70-130	
Zinc	ug/L	0.13 mg/L	20	154	97	70-130	

MATRIX SPIKE SAMPLE: 243179		2039551001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	ug/L	0.0013 mg/L	20	22.8	108	70-130	
Barium	ug/L	0.030 mg/L	20	53.2	114	70-130	
Beryllium	ug/L	ND	20	21.9	110	70-130	
Boron	ug/L	161	20	188	132	70-130 M1	
Cadmium	ug/L	ND	20	20.8	104	70-130	
Chromium	ug/L	ND	20	21.3	104	70-130	
Copper	ug/L	0.0070 mg/L	20	27.4	102	70-130	
Lead	ug/L	ND	20	21.6	106	70-130	
Manganese	ug/L	6.9	20	27.7	104	70-130	
Mercury	ug/L	ND	4	4.4	108	70-130	
Nickel	ug/L	0.0028 mg/L	20	23.3	102	70-130	
Selenium	ug/L	ND	20	21.2	105	70-130	
Silver	ug/L	ND	20	20.0	100	70-130	
Zinc	ug/L	0.031 mg/L	20	51.3	102	70-130	

SAMPLE DUPLICATE: 243157

Parameter	Units	2039550001	Dup	RPD	Max	
		Result	Result		RPD	Qualifiers
Arsenic	ug/L	0.0022 mg/L	2.2	2	20	
Barium	ug/L	0.093 mg/L	96.6	4	20	
Beryllium	ug/L	ND	ND		20	
Boron	ug/L	158	159	1	20	
Cadmium	ug/L	ND	ND		20	
Chromium	ug/L	0.0023 mg/L	2.1	9	20	
Copper	ug/L	0.035 mg/L	36.1	2	20	
Lead	ug/L	0.0047 mg/L	4.3	9	20	
Manganese	ug/L	268	271	1	20	
Mercury	ug/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

SAMPLE DUPLICATE: 243157

Parameter	Units	2039550001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nickel	ug/L	0.0049 mg/L	4.7	5	20	
Selenium	ug/L	ND	ND		20	
Silver	ug/L	ND	ND		20	
Zinc	ug/L	0.13 mg/L	137	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 58846

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 242991

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfur	ug/L	ND	100	07/15/16 17:53	

LABORATORY CONTROL SAMPLE: 242992

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfur	ug/L	10000	10200	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 242993

242994

Parameter	Units	2039586004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfur	ug/L	104 mg/L	10000	10000	111000	111000	73	75	80-120	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 242995

242996

Parameter	Units	2039589008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfur	ug/L	24.4 mg/L	10000	10000	34400	34800	100	104	80-120	1	20	

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 59001

Analysis Method: SM 2340C

QC Batch Method: SM 2340C

Analysis Description: 2340C Hardness, Total

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 243637

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Hardness	mg/L	ND	5.0	07/15/16 10:24	

LABORATORY CONTROL SAMPLE: 243638

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Hardness	mg/L	319	310	97	90-110	

SAMPLE DUPLICATE: 243639

Parameter	Units	2039525001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Hardness	mg/L	190	190	0	20	

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 58683

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 242376

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.020	07/14/16 11:12	

LABORATORY CONTROL SAMPLE: 242377

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.19	93	90-110	

MATRIX SPIKE SAMPLE: 243166

Parameter	Units	2039549001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.089	41	75-125	M1

SAMPLE DUPLICATE: 243165

Parameter	Units	2039549001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 58815

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 242876

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	07/13/16 16:07	

LABORATORY CONTROL SAMPLE: 242877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	98	90-110	

MATRIX SPIKE SAMPLE: 242879

Parameter	Units	2039376002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L			11.0			

SAMPLE DUPLICATE: 242878

Parameter	Units	2039376002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L		0.31			

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 58966

Analysis Method: EPA 351.2

QC Batch Method: EPA 351.2

Analysis Description: 351.2 TKN

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 243553

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.10	07/16/16 16:00	

LABORATORY CONTROL SAMPLE: 243554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	5.2	4.7	90	80-120	

MATRIX SPIKE SAMPLE: 243556

Parameter	Units	2039600001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	0.19	2.5	2.8	103	75-125	

SAMPLE DUPLICATE: 243555

Parameter	Units	2039600001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	0.19	0.45	82	20	D6

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 59109

Analysis Method: SM 4500-CN-E

QC Batch Method: SM 4500-CN-C

Analysis Description: 4500CNE Cyanide, Total

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 244184

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.010	07/19/16 10:29	

LABORATORY CONTROL SAMPLE: 244185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.094	94	80-120	

MATRIX SPIKE SAMPLE: 244187

Parameter	Units	2039280001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	ND	.1	0.073	73	75-125	M1

SAMPLE DUPLICATE: 244186

Parameter	Units	2039280001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 58973

Analysis Method: SM 4500-NO3 F

QC Batch Method: SM 4500-NO3 F

Analysis Description: SM4500NO3-F, Nitrate, Preserved

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 243571

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.050	07/15/16 15:03	

LABORATORY CONTROL SAMPLE: 243572

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1.8	1.9	110	90-110	

MATRIX SPIKE SAMPLE: 243574

Parameter	Units	2039525001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.7	1	3.7	96	80-120	

SAMPLE DUPLICATE: 243573

Parameter	Units	2039525001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.7	2.7	0	20	

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QUALITY CONTROL DATA

Project: Fibers Project

Pace Project No.: 2039549

QC Batch: 58857

Analysis Method: ASTM D516-90,02

QC Batch Method: ASTM D516-90,02

Analysis Description: ASTM D516-9002 Sulfate Water

Associated Lab Samples: 2039549001, 2039549003

METHOD BLANK: 243022

Matrix: Water

Associated Lab Samples: 2039549001, 2039549003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	07/14/16 09:15	

LABORATORY CONTROL SAMPLE: 243023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	20.3	101	90-110	

MATRIX SPIKE SAMPLE: 243025

Parameter	Units	2039594001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	107	10	105	-20	75-125	M1

SAMPLE DUPLICATE: 243024

Parameter	Units	2039594001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	107	107	0	20	

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QUALIFIERS

Project: Fibers Project
Pace Project No.: 2039549

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Fibers Project

Pace Project No.: 2039549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2039549001	INF-(20160711)	EPA 3010	58846	EPA 6010	58908
2039549003	EFF-(20160711)	EPA 3010	58846	EPA 6010	58908
2039549001	INF-(20160711)	EPA 200.8	58896	EPA 200.8	58902
2039549003	EFF-(20160711)	EPA 200.8	58896	EPA 200.8	58902
2039549001	INF-(20160711)	SM 2340C	59001		
2039549003	EFF-(20160711)	SM 2340C	59001		
2039549001	INF-(20160711)	SM 4500-S-2 D	58683		
2039549003	EFF-(20160711)	SM 4500-S-2 D	58683		
2039549001	INF-(20160711)	40CFR PART 432.2	58835		
2039549003	EFF-(20160711)	40CFR PART 432.2	58835		
2039549001	INF-(20160711)	EPA 300.0	58815		
2039549003	EFF-(20160711)	EPA 300.0	58815		
2039549001	INF-(20160711)	EPA 351.2	58966	EPA 351.2	59057
2039549003	EFF-(20160711)	EPA 351.2	58966	EPA 351.2	59057
2039549001	INF-(20160711)	SM 4500-CN-C	59109	SM 4500-CN-E	59152
2039549003	EFF-(20160711)	SM 4500-CN-C	59109	SM 4500-CN-E	59152
2039549001	INF-(20160711)	SM 4500-NO3 F	58973		
2039549003	EFF-(20160711)	SM 4500-NO3 F	58973		
2039549001	INF-(20160711)	ASTM D516-90,02	58857		
2039549003	EFF-(20160711)	ASTM D516-90,02	58857		

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1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

Project #: **20**

Courier: ☐ Pace Courier ☐ Hired Courier ☒ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: ☒ Yes ☐ No

Thermometer
Used:

- ☐ Therm Fisher IR 5
☐ Therm Fisher IR 6
☒ Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining
contents: 07-13-16 RB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted:

Date/Time:

Comments/ Resolution:

* NO Low Level Mercury containers sent with Kit.